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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,098	01/10/2007	Mario Leclerc	GENOM.071NP	1280
29995 7590 03/26/2008 KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614				
EXAMINER				
PITRAK, JENNIFER S				
ART UNIT		PAPER NUMBER		
1635				
NOTIFICATION DATE		DELIVERY MODE		
03/26/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
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Office Action Summary

Application No.

10/559,098

Applicant(s)

LECLERC ET AL.

Examiner

JENNIFER PITRAK

Art Unit

1635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 and 35-38 is/are pending in the application.
- 4a) Of the above claim(s) 5, 6, 9-25 and 35-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S506)
Paper No(s)/Mail Date 12/01/2005
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group II, claims 1-4 and 7 and 8 drawn to an optical sensor for detecting D-adenosine in the reply filed on 01/15/2008 is acknowledged. The traversal is on the ground(s) that the special technical feature is not solely an aptamer, but is the combination of an aptamer and a polythiophene derivative (p.8 of response). This is not found persuasive because the combination does not make a contribution over the prior art as described in the following rejection(s).

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

Claim 3 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 3 specifies that aptamer of Claim 1 is an oligonucleotide. This does not further limit Claim 1 because aptamers are oligonucleotides (see Gold, 1995, p.13581, first paragraph in second column.).

Claim Rejections - 35 USC § 103

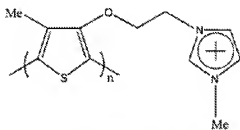
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1635

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leclerc, *et al.* (WO02/081735, published 10/17/2002, of record) and Gold (1995, JBC, v.270:13581-4).

The claims are to an optical sensor for detecting a target comprising a single-stranded DNA aptamer and a water-soluble cationic polythiophene derivative of the formula,



wherein "n" is an integer ranging from 6 to 100.

wherein the target is selected from i) potassium ions, ii) small organic molecules, iii) amino acids, iv) proteins, v) whole cells, and vi) nucleotides.

Leclerc, *et al.* teach polythiophene derivative complexes for the detection of an acidic protein. They teach detection of the protein by contacting a target complementary to the protein with the polythiophene derivative shown above, contacting the duplexed target-polythiophene derivative with the protein, and detecting a change (in electronic charge, fluorescence, or color) as an indication of the presence of the protein, wherein the target is a nucleic acid (claims 16, 21, 22, and 26 of WO02/081735). LeClerc, *et al.* do not specifically teach that the target is an aptamer.

Gold teaches that aptamers are single-stranded DNA molecules that interact with target molecules (see p.13581, first paragraph and first paragraph of the second column). Gold also

teaches that the aptamers are useful for detecting proteins in intracellular localization experiments and that the aptamers can be modified with visualization-enhancing adducts and reporters (p13583, "Uses of Molecules Derived from SELEX").

It would have been obvious to one skilled in the art at the time of the instant application to make a polythiophene-DNA complex for detecting a target molecule, such as a protein, as taught by Leclerc, *et al.* wherein the DNA molecule is an aptamer, as taught by Gold. The Leclerc reference teaches the polythiophene-DNA complex for the purpose of detecting molecules of interest and Gold teaches that aptamers are nucleic acids useful for binding to and detecting target molecules of interest. One of ordinary skill would find it obvious to substitute the specific nucleic acid, an aptamer, in place of the DNA in LeClerc's DNA-polythiophene complexes for the purpose of detecting a target protein. Thus, claims 1-4 would have been obvious at the time of filing of the instant application.

Allowable Subject Matter

Claims 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER PITRAK whose telephone number is (571)270-3061. The examiner can normally be reached on Monday-Friday, 8:30AM-5:00PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Schultz can be reached on 571-272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jennifer Pitrak, PhD
Examiner
Art Unit 1635

/Tracy Vivlemore/
Examiner, Art Unit 1635